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PREFACE

Many business organizations and government departments are nowadays developing and providing Internet based electronic services (e-services) featuring various intelligent functions. This form of e-services is commonly called \textit{e-service intelligence} (ESI). ESI integrates intelligent technologies and methodologies into e-service systems for realizing intelligent Internet information searching, presentation, provision, recommendation, online system design, implementation, and assessment to Internet users. These intelligent technologies include machine learning, soft computing, intelligent languages, and data mining etc. ESI has been recently identified as a new direction for the future development stage of e-services.

E-services offer great opportunities and challenges for many areas of services, such as government, education, tourism, commerce, marketing, finance, and logistics. They thus involve various online service providers, delivery systems and applications including e-government, e-learning, e-shopping, e-marketing, e-banking, and e-logistics. ESI is providing with a much higher quality presentation of web information, personalized online recommendation, customaries online decision support, direct user participation in organizational planning, and more integrated seamless link online services. It also has e-services evolved into online knowledge discovery and user analysis, and becomes adaptive, proactive and accessible from a broader variety of devices. We have begun to see more and more successful developments in building intelligent functions and systems of e-services such as web search by fuzzy matching; web usage mining by fuzzy sequential pattern; Internet shopping systems using multi-agents; product recommender systems supported by genetic algorithms; e-logistics systems using optimization models; online customer segments using data mining; rough set based ontology of mapping in online service integration; online question/answer service systems using fuzzy logic; visualized web information presentation; game theory based e-negotiation; inference approach in e-service cost benefic analysis; and knowledge discovery through using case-based reasoning in e-learning systems. It is thus instructive and vital to gather current trends and provide a high quality forum for theoretical research results of ESI and practical developments of
intelligent e-service applications for various government and business organizations.

This book aims at offering a thorough introduction and systematic overview of the new field. It consists of 32 chapters invited and selected from more than 60 submissions distributed in about 15 countries and regions and covers the state-of-the-art of the research and development in various aspects including both theorems and applications of ESI in five parts: (1) E-Services and Intelligent Techniques; (2) Web Information Presentation, Search, and Mining; (3) Personalization, Privacy, and Trust in E-Services; (4) E-Service Evaluation, Optimization and Knowledge Discovery; and (5) Intelligent E-Service System Developments.

The intelligent techniques applied in e-services, reported in this book, include fuzzy logic, expert systems, case based reasoning, artificial neural networks, Bayesian network, game theory, multi-criteria decision analysis, rough sets, data mining, linguistic techniques, multi-agents, ontology, sensory model, Chaos theory, genetic algorithms, and many of their combinations. The detailed application fields of ESI, presented in this book, involve personal e-Banking, e-Negotiators, e-Map, one-stop e-Shopping, secure e-Transactions, integrated e-Supply chain, learner-oriented e-Learning, e-Government service integration, online auctions, online payments, online sports services, online human resource management, online customer experience management, online user behaviors analysis, and online user trust evaluation. The research methodologies shown in these chapters include theoretical investigations, framework development, model establishment, approach proposing, case based study, survey data analysis, hypothesis testing, software implementation, and experimental assessment.

There are more than 20 national research grants to have supported the completeness of the researches presented in this book. Special thanks are due to all the authors of all chapters for their timely cooperation. Each chapter of the book is self-contained and we hope this volume will benefit many readers around the world.

June 2006

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CONTENTS

Part 1: E-Services and Intelligent Techniques

Chapter 1 E-Service Intelligence: An Introduction
Jie Lu, Da Ruan, and Guangquan Zhang ....................................................... 1

Chapter 2 Rough Sets and Conflict Analysis
Zdzisław Pawlak and Andrzej Skowron ......................................................... 35

Chapter 3 Rough Ontology Mapping in E-Business Integration
Yi Zhao, Wolfgang Halang, and Xia Wang ...................................................... 75

Chapter 4 Concept-Based Semantic Web Search and Q&A
Masoud Nikravesh .......................................................................................... 95

Chapter 5 e-Service Composition Tools from a Lifecycle Perspective
Wei Liu, Husniza Husni, and Lin Padgham ...................................................... 125

Part 2: Web Information Presentation, Search, and Mining

Chapter 6 Web Information Representation, Extraction, and Reasoning Based on Existing Programming Technology
Fei Liu, Jidong Wang, and Tharam S. Dillon .................................................. 147

Chapter 7 Techniques and Technologies Behind Maps of Internet and Intranet Document Collections
Mieczysław A. Kłopotek, Sławomir T. Wierzchoń, Krzysztof Ciesielski, Michał Dramiński, and Dariusz Czerski ................................................................. 169

Chapter 8 Exchange Rate Modelling for e-Negotiators Using Text Mining Techniques
Debbie Zhang, Simeon Simoff, and John Debenham ..................................... 191

Chapter 9 A Similarity-aware Web Content Caching Scheme and Agent-based Web Document Pre-fetching
Jitian Xiao ....................................................................................................... 213

Chapter 10 Representation and Discovery of Intelligent E-Services
Xia Wang, Bernd J. Krämer, Yi Zhao, and Wolfgang A. Halang ....................... 233
Chapter 11 Learning the Nonlinear Dynamics of Cyberlearning
Giacomo Patrizi, Claudio Cifarelli, and Laura Di Giacomo .....................253

Part 3: Personalization, Privacy, and Trust in E-Services

Chapter 12 Personalizing e-Commerce with Data Mining
Matthew Smith, Brent Wenerstrom, Christophe Giraud-Carrier, Steve Lawyer, and Wendy Liu .................................................................273

Chapter 13 Personal eBanking Solutions based on Semantic Web Services
Oscar Corcho, Silvestre Losada, Richard Benjamins, José Luis Bas, and Sergio Bellido .................................................................287

Chapter 14 Secure e-Transactions Protocol using Intelligent Mobile Agents with Fair Privacy
Song Han, Elizabeth Chang, and Tharam Dillon ..................................307

Chapter 15 Trust and Reputation in E-services: Concepts, Models and Applications
Javier Carbo, Jesus Garcia, and Jose M. Molina .......................................327

Chapter 16 An Incremental Technique for Analyzing User Behaviors in an E-Business Environment
Yue-Shi Lee, Show-Jane Yen, and Min-Chi Hsieh ....................................347

Chapter 17 Customer Experience Management in E-Services
Zhaozhao Sun and Sim Kim Lau .............................................................365

Part 4: E-Service Evaluation, Optimization, and Knowledge Discovery

Chapter 18 E-Service Cost Benefit Evaluation and Analysis
Jie Lu, Chenggang Bai, and Guangquan Zhang ........................................389

Chapter 19 Evaluation of Experience-based Support for Organizational Employees
Slota Renata, Majewska Marta, Kitowski Jacek, Lambert Simon, Laclavik Michal, Hluchy Ladislav, and Viano Gianni ........................................411

Chapter 20 A Web Based Intelligent Sensory Evaluation System in the Textile Integrated Supply Chain
Bin Zhou, Xianyi Zeng, Ludovic Koehl, and Yongsheng Ding ..................435

Chapter 21 E-Intelligence in Portfolio Investment Optimization
K. Stoilova, Z. Ivanova, and T. Stoilov ....................................................457
### Contents

**Chapter 22** Orchestrating the Knowledge Discovery Process  
*Marcello Castellano, Giuseppe Mastronardi, Flaviano Fiorino, Giuliano Bellone de Grecis, Francesco Arcieri, and Valerio Summo*  
..............................................477

**Chapter 23** On the Knowledge Repository Design and Management in E-Learning  
*Emma Kushchina, Oleg Zaitkin, and Przemysław Różewski*  
.............................................497

**Chapter 24** Adding Value to E-Services: a Business-Oriented Model  
*Marius Fluegge and Michael C. Jaeger*  
................................................517

**Part 5: Intelligent E-Service Support System Developments**

**Chapter 25** Developing a Knowledge-Based Intelligent Services System in Sports Websites  
*Edmond H. Wu and Michael K. Ng*  
..........................................................535

**Chapter 26** Developing a Model Agent-based E-commerce System  
*Costin Bădică, Maria Ganzha, and Marcin Paprzycki*  
........................................555

**Chapter 27** Creating Visual Browsers for Large-Scale Online Auctions  
*Mao Lin Huang, Quang Vinh Nguyen, and Wei Lai*  
.............................................579

**Chapter 28** Design and Implementation of Multi-Agents for Learner-oriented Course Scheduling on the Internet  
*Dong Chun Lee and Keun Wang Lee*  
..........................................................601

**Chapter 29** AGrIP – Agent Grid Intelligence Platform  
*Zhongzhi Shi, He Huang, Yuncheng Jiang, Jiwen Luo, Zheng Zheng, and Fen Lin*  
..........................................................627

**Chapter 30** Web-based Service Information Systems based on Fuzzy Linguistic Techniques and Semantic Web Technologies  
*Enrique Herrera-Viedma, Eduardo Peis, José M. Morales-del-Castillo, and Karina Anaya*  
..........................................................647

**Chapter 31** Application of Chaos-based Pseudo-Random-Bit Generators in Internet-based Online Payments  
*Ping Li, Zhong Li, Siegfried Fettinger, Yaobing Mao, and Wolfgang A. Halang*  
..........................................................667

**Chapter 32** Computer Hardware Devices in Efficient e-Servicing: Case Study of Disk Scheduling by Soft Computing  
*A.B. Patki, Tapasya Patki, Swati Khurana, Revati Patki, and Aditi Kapoor*  
..........................................................687

**Subject Index**  
..........................................................705